

PROJECT TITLE : ANALYTICAL INVESTIGATIONS
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WRITTEN BY : F. MOSER

N-NITROSAMINES

- The determination of volatile (DMN/NPY) and non-volatile (NNN/NNK/NAtB) nitrosamines in prototype cigarettes of project SPOTLESS, (1) has been started.
- At the request of PM Richmond (2), NNN and NNK in mainstream smoke of nine experimental cigarettes were determined. The results have been submitted to PM Richmond (3).
- Removal of volatile nitrosamines from cigarette mainstream smoke:

The possibility to reduce the amount of DMN and NPY in MS of an experimental cigarette by CA filter (18 mm) and by variation of the concentration of the filter additive triacetin has been investigated (4). Results of the first part of these investigations are summarized in the table.

	<u>non-filter cigarette</u>	<u>cigarette with CA filter (18 mm)</u>				
Triacetin	-	0 %	3 %	5 %	7 %	>10 %
DMN (ng/c) *)	9.6	2.4	2.0	1.8	1.4	1.7
Reduction (%)		75	79	81	85	84
NPY (ng/c) *)	10.3	4.3	4.8	n.d.	4.5	3.7
Reduction (%)		58	53	n.d.	56	64

*) Mean values of 5 determinations.
n.d. = not determined

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1. 75 % of DMN and 58 % of NPY are retained by a triacetin-free CA filter, length 18 mm.
2. The amount of DMN in MS can be further reduced by increasing amounts of triacetin on the CA filter ("solvent effect"). A maximum of 10 % DMN is retained by 7 % of triacetin. The concentration of NPY in MS is not reduced by triacetin.
3. Triacetin concentrations higher than 7 % give no further reduction of DMN.

Complete removal of DMN from MS can possibly be achieved by variation of CA filter length and triacetin concentrations. The removal of NPY by modification of triacetin as well as the reduction of NNN, NNK and NAtB concentrations by CA filter/triacetin is presently under investigation.

SERVICE FOR OTHER GROUPS

- The SH-index of nine experimental cigarettes from PM Richmond (2), eight cigarette brands (UK) and of two tobacco lots (TLA) were determined.
- 41 NINO extracts and four tobacco samples were analyzed for potassium, calcium and magnesium by atomic absorption.

REFERENCES

- (1) F. Moser, PME Monthly Progress Report, April 1980
- (2) Memo of R.D. Carpenter to W. Fink, dated April 29, 1980
- (3) Memo of W. Fink to R.D. Carpenter, Dated June 12, 1980
- (4) F. Moser, PME Monthly Progress Report, p. 2, April 1980

F. Moser

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